

REMARKS

Claims 1, 3-14 and 18-28 are pending in the current application. Claims 1, 6, 7 and 8 are independent claims. Claim 2 has been canceled. No new matter has been added. In view of the following remarks, favorable reconsideration and withdrawal of the rejection is requested.

RESTRICTION REQUIREMENT

The Examiner has issued a Restriction Requirement, requesting that Applicants elect one of the following groups for prosecution in connection with the present application. The groups are as follows:

Group I - including claims 1-14 and 18-28, drawn to linker compounds and ligands; or

Group II - including claims 15-17, drawn to a method for measurement of surface plasmon resonance.

Although Applicants do not necessarily agree with the Examiner's Restriction Requirement, Applicants hereby elect Group I, including claims 1-14 and 18-28 for prosecution in connection with the present application. The election is made without traverse. However, Applicants explicitly reserve the right to file a divisional application on the non-elected claims during the pendency of this application.

35 U.S.C. § 112, SECOND PARAGRAPH REJECTION

Claims 1-5, 8-14, 18, 21-23 and 27-28 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Applicant traverses.

With regard to the use of the term “versatile” in the preamble of independent claim 1, Applicant submits that the term “versatile” has been removed from independent claim 1, and likewise, dependent claims 3 and 8.

Further, independent claim 1 has been amended to clarify the chemical nature and structure of the four hydrocarbon derivative chains arranged or branched at “X”; and to exclude the terminology “may or may not”.

With regard to claims 8, 9, 13, 14, 21, 22, 27 and 28, Applicants submit that these claims have been amended to include steps considered “essential” by the Examiner. Although, Applicants submit that the steps of protecting and reducing are inherent in the structures recited therein.

With regard claims 10, 18 and 23, claims 4, 6 and 7, from which claims 10, 18 and 23 respectively depend, each recite a limitation wherein a sugar molecule is introduced in the ligand. Thus, claims 4, 6 and 7 clearly define the step for introducing a sugar molecule which according to the method of claim 10 comes into contact with a supporter.

Thus, Applicant submits that the above remarks and amendments overcome the rejection. As such, withdrawal is respectfully requested.

35 U.S.C. § 112, FIRST PARAGRAPH REJECTION

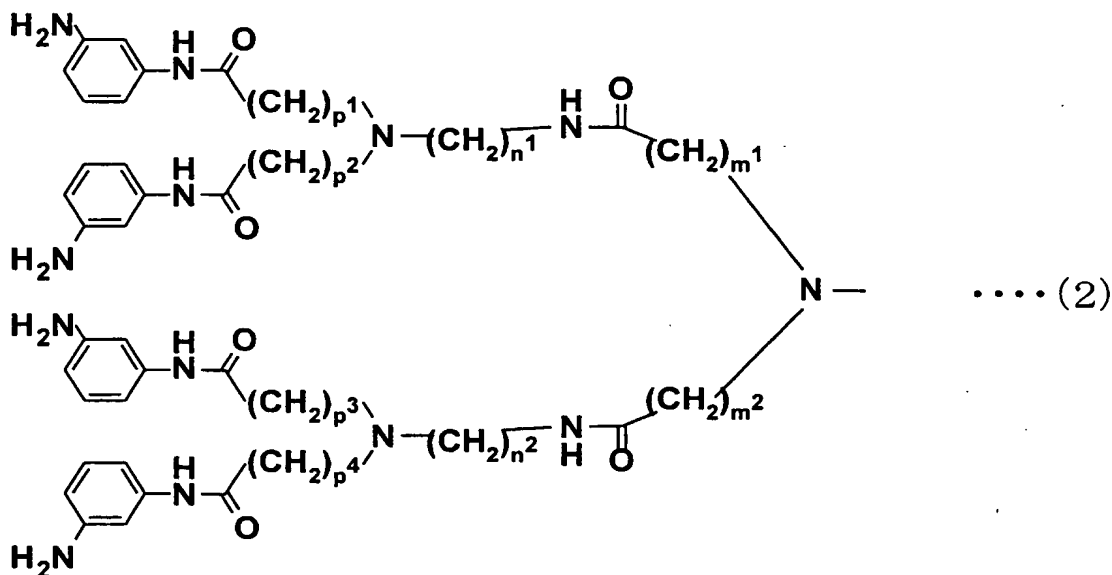
Claims 1-5, 9-14 and 28 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly being enabling. Applicantstraverse.

As discussed above, Applicants submit that independent claim 1 has been amended, overcoming the rejection. As such, withdrawal is respectfully requested.

35 U.S.C. § 103 (a) REJECTION – HAYASHI, SUMIDA AND TOMALIA

Claims 1-14 and 18-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayashi et al. (hereinafter “Hayashi”), Tentative Lecture Proceeding, Chemical Society of Japan 2001, in view of Sumida et al. (hereinafter “Sumida”), JP 2002-80488 A and Tomalia et al. (hereinafter “Tomalia”), U.S. Patent No. 5,714,166. Applicants respectfully traverse.

Applicants submit that each of independent claims 1, 6, 7 and 8 recite (*albeit*, in different formats) a structure represented by general formula (2):



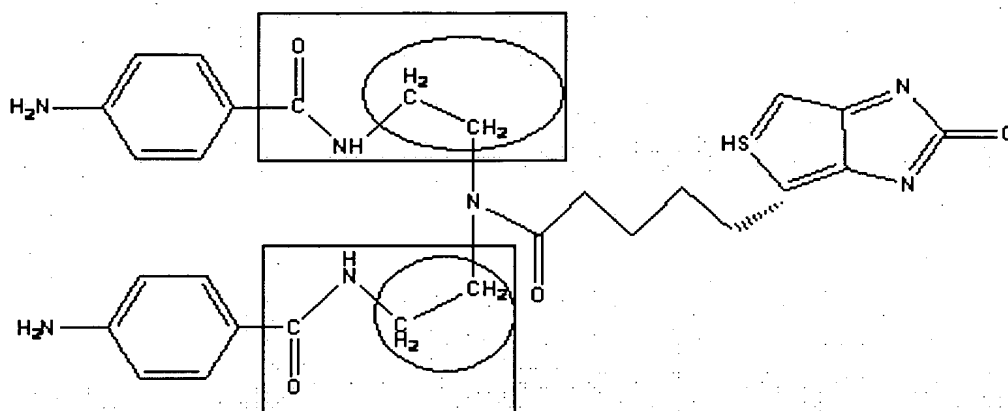
wherein m^1 , m^2 , n^1 , n^2 , p^1 , p^2 , p^3 , and p^4 are independently integers of 1 to 6. Non-limiting, example embodiments may be found throughout the Specification.

Applicants submit that the prior art references relied upon by the Examiner fail teach or suggest any structure represented by general formula (2).

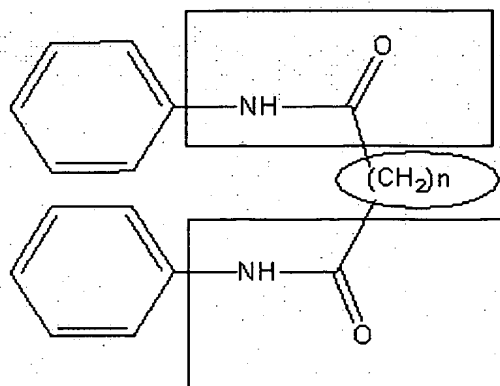
HAYASHI AND SUMIDA

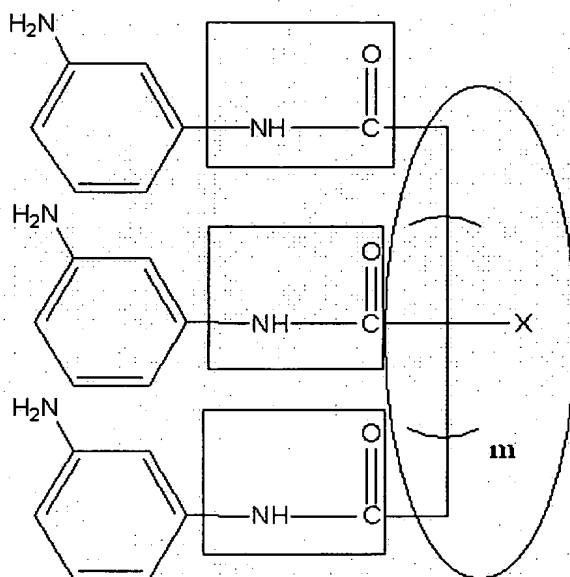
While acknowledging Hayashi's failure to "...disclose four hydrocarbon derivative chains...", the Examiner asserts that Sumida cures the deficiencies of Sumida. The Examiner states that Hayashi and Sumida "...both have the same hydrocarbon derivative chain structure...[thus] a person skilled in the art would easily understand that increasing the hydrocarbon chain having terminal aromatic amino group in the linker compound would enable the collecting of sacchrides to be carried out more efficiently." Action, p. 8. Applicants disagree.

Hayashi and Sumida do not disclose the same hydrocarbon derivative chain. Referring to compound 1 of Hayashi (reproduced below), Hayashi discloses two hydrocarbon derivatives (encircled by a square) wherein each derivative includes at least one amino group linked to a common amino group. Each hydrocarbon derivative includes two carbons (circle) between the amino groups. Further, an amino group is interposed between a hydroxyl group and a hydrocarbon derivative.

**COMPOUND 1 OF HAYASHI**

However, the compounds in Sumida disclose a single hydrocarbon derivative (circle) bonded to at least two hydrocarbon derivative chains (square) wherein there are no amino groups bonding the single hydrocarbon derivative (circle) to the hydroxyl group. Furthermore, Sumida teaches an amino group bonds to a hydroxyl and a benzene ring, not interposed between the hydroxyl and the single hydrocarbon derivative. See compounds 1 and 2 of Sumida (reproduced below).

**COMPOUND 1 OF SUMIDA**



COMPOUND 2 OF SUMIDA

Thus, Applicant submits 1) the amino groups are located in different positions; and 2) Sumida discloses hydrocarbon derivative chains bonding to another hydrocarbon derivative and Hayashi discloses hydrocarbon derivative chains bonding to an amino group.

For at least these reasons, Applicants submit that Hayashi and Sumida do not have the “same hydrocarbon derivative chain structure.” Thus, in view of the arguments above, there would have been no motivation to make the alleged combination. As such, Applicants submit that Sumida fails to cure the deficiencies of Hayashi, even assuming that they could be combined (which Applicants do not admit).

Therefore, the combination of Hayashi in view of Sumida fails to obviate a structure represented by general formulas (2), (3) or (4) as recited in independent claims 1, 6 and 7, respectively.

Furthermore, with regard to independent claim 8, Hayashi discloses compound 1 without providing a method of synthesis. Sumida fails to provide any teaching that suggest a condensation reaction between biotin and an amine compound.

Therefore, the combination of Hayashi in view of Sumida also fails to obviate the limitations of independent claim 8.

TOMALIA

Tomalia, directed to dense star polymers, fails to teach anything regarding four hydrocarbon derivative chains or a condensation reaction between biotin and an amine compound.

Thus, Tomalia also fails to cure the deficiencies of Hayashi, even assuming that they could be combined (which Applicants do not admit).

Accordingly, even assuming that they could be combined (which Applicants do not admit), Hayashi in view of Sumida and Tomalia fails to teach or suggest at least the chemical structure of formula (2), formula (3) or formula (4) as recited in independent claims 1, 6 and 7, respectively.

Applicants also submit that Hayashi in view of Sumida and Tomalia fails to teach or suggest "carrying out a condensation reaction between a biotin-containing compound and the amine compound wherein each aromatic amino group end is protected by a protecting group" as recited in independent claim 8.

As such, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of independent claims 1, 6, 7 and 8.

Reconsideration and withdrawal of the rejection to claims 3-5, 9-14 and 18-28, at least by virtue of their dependency on independent claims 1, 6, 7 or 8, is kindly requested.

CONCLUSION

Accordingly, in view of the above, reconsideration of the rejections and allowance of each of claims 1, 3-14 and 18-28 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application; the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By 
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000